

Electricity Transmission Data Needs Focus Group Results

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Introduction and Methodology

The electricity industry is presently in a period of transition from a regulated to a restructured industry. This has caused EIA to change a number of the forms and respondents it uses to collect data on the generation, transmission, and consumption of electricity. Gaining useful price data throughout the process has also become a greater challenge with new players in the market involved with the sale of electricity. EIA has attempted to meet this challenge during the course of the last few years. However, there have been widespread concerns over EIA's lack of comprehensive data on transmission. This interest and concern has evolved principally from several widely publicized blackouts during the last few years (e.g., the August 14, 2003 blackout which extended from Ohio to New York City). EIA has decided to develop both short-term and long-term plans to meet the needs of its data users.

Toward that end, four focus groups were conducted from November, 2003 through January, 2004 on the topic of electricity transmission data needs. The participants in each of these groups were fairly homogenous with the following groupings:

1. EIA (Office of Coal Nuclear Electric and Alternative Fuels, Office of Integrated Analysis and Forecasting, National Energy Information Center, Energy Markets and End-Use, Statistics and Methods Group, Office of the Administrator)
2. DOE offices (Office of Electricity Transmission and Distribution, Office of Energy Efficiency and Renewable Energy, Office of Policy and International Affairs)
3. Other Federal organizations (Congressional Budget Office, Federal Energy Regulatory Commission, Department of Justice)
4. Non-Federal organizations (Resources for the Future, Edison Electric Institute, Department of Agriculture, National Rural Electric Cooperative Ass'n, National Association of State Energy Officials, American Public Power Ass'n, Electric Public Research Institute, Electric Power Supply Ass'n)

Each focus group had from 9 to 12 participants. The sessions were audio taped for the purpose of writing the report. The moderator was experienced with moderating focus groups with the goal of collecting information on data requirements. Two subject matter experts also attended the sessions. The participants were asked questions from a structured protocol; these questions involved the following topics: characterizing EIA's present transmission data collection, emerging issues in transmission, specific data needs, sources of data, and confidentiality issues. A closing question was used to attempt to

capture any miscellaneous suggestions and comments from participants. (See Appendix A.)

It should also be noted that EIA has conducted and plans to further conduct a number of executive or telephone interviews to supplement the focus group data. These interviewees have included and will include congressional staff members, an expert consultant, a public utility commissioner and a representative from a transmission company.

Results

It was found that most of the participants in the focus groups were very knowledgeable regarding the transmission system. The following issues were identified by participants:

- Changes in ownership
- Is volume flow data necessary? If so, at what level of detail?
- Determining the location of potential bottlenecks
- Availability of the grid to generators
- Disturbances on the grid
- The need to measure reliability
- Evolution of Regional Transmission Organizations (RTOs)
- Need for models and their dynamic data requirements
- Need for market transparency
- Problems in data collection arising from joint ownership
- Distinguishing between owned and controlled facilities
- Need for dynamic ratings
- Need for line maintenance data

Through the four focus groups, it was found that participants wanted to know the following about the transmission system:

- Economics of the grid system: market competition, accessibility, inter-connectivity, and market power.
- Policy needs: the reliability of the grid (Transmission Loading Relief Report (TLR)), disturbances as reported on the EIA-417 form¹, data needed to understand the development of a regional electricity market and assess investment needs, and the security of critical infrastructure.
- Analytical needs: long-term pricing of transmission, short-term merger analysis or competitive analysis; market transparency in understanding market power, access to transmission, and pricing of transmission services; interconnection charge associated with the flow of power by time and location.
- Physical planning needs: existing line miles of transmission, costs of investment in new lines, costs of adding additional transmission capacity (e.g., towers, cost

¹ EIA Form 417: "Electricity Emergency Incident and Disturbance Report."

per mile of line, costs of other facilities), percentage of the total owned by public power, transmission flows within states, the implications of transmission on capacity expansion decisions and costs; age of transformers and other facilities; length of time needed to construct new transmission lines; outages, and transmission line outages, including frequency and duration; number of occurrences of transmission line denial; access charges.

Potential Data Sources

Participants identified the following entities/exant forms/equipment as potential data sources for EIA:

- Independent System Operators (ISOs)
- Regional Transportation Organizations (RTOs)
- North American Electric Reliability Council (NERC)
- State Public Utility Commissions (PUCs)
- Open Access Same time Information Systems (OASIS)
- FERC Form-1²
- Possible use of telemeters
- Generator Interconnection Reports
- Construction of transmission facilities reports

Focus Group Recommendations/Observations

Focus group participants made a number of recommendations that have been considered by EIA. Some of these are as follows:

- Need to define EIA's role in providing transmission data.
- Develop a greater cooperation between EIA and FERC.
- EIA should begin to process flow and capacity data using EIA, FERC, ISO, RTO, and RUS data.
- Codes/names of reporting entities should be standardized.
- Use FERC State of the Market Report, NERC data, and EIA data to analyze the transmission market, pricing of services, and unbundled electricity prices.
- For reporting purposes, it will be useful to align transmission data map toward RTOs, ISOs or control areas.
- The goals of collecting transmission data must be clear so that the processed data and analyses performed using the data can serve a well-defined objective.
- EIA should explain markets for their customers and write reports in narrative form rather than in schematics.
- EIA's reports are disseminated on a periodic basis with similar indicators throughout. This leads to a worthwhile time series.

² FERC Form-1: "Annual Report of Major Electric Utilities, Licensees, and Others."

Conclusions

The focus group methodology is useful for collecting data from a select group of expert professionals on a topic, such as the data needs of customers regarding electricity transmission. A limited number of focus groups combined with executive interviews led to useful data and information.

Appendix A

Electricity Transmission Protocol (Data Users)

A. I begin by briefly explaining EIA's reasons for meeting with the participants.

1. The overall objectives of the sessions are:
 - To identify EIA's customer's data needs related to electricity transmission,
 - To assess available information,
 - To identify appropriate data providers,
 - To minimize the respondent burden while still achieving these objectives.

B. Introductions

1. *Please introduce yourself, your position and your organization. Also, tell us a little about your involvement with electricity transmission.*

C. Substantive Questions

2. *Regarding EIA's present electricity transmission data, how would you characterize it? (Probes: Is it lacking in terms of the type of data collected?*
 - *In terms of the quality of the data collected?*
 - *In terms of the timeliness of the data disseminated?)*
3. *What are the most important emerging issues or questions in the electricity transmission area that you expect to need information on within the next few years? Over the longer term?*
4. *Considering the recent changes in the electricity markets, what data do you need regarding electricity transmission?*
 - a. *How would you like this data in terms of geographical breakdown? (Probes: Do you need state-level data? Data at the sub-state level? Market-area data?)*
 - b. *How would you like this data in terms of a breakdown by time? (By this I mean: Do you need minute-by-minute data? Hourly data? Monthly peak data? Weekly peak data? Daily peak data?)*
5. *Should EIA collect data on distribution lines in addition to collecting data on transmission lines? (Probe:*
What should the line capacity limit be for EIA to collect that data?)
6. *Are there data sources already available for any data that we discussed that you know of?*
7. *For data items that were discussed, do you know whom EIA should survey in order to obtain that data?*

8. *Should EIA develop models to perform certain functions or to answer specific analytical questions?*
9. *Can you identify a few issues critical to assessing how well the transmission system works both in terms of using existing resources and in terms of meeting future needs?*
10. *For these data collection issues, we've been discussing are there any particular confidentiality issues EIA should know about?*
11. *I assume that you would like electronic dissemination of the data, but should EIA disseminate the data in any particular format or organized in any particular way? (Probe: Would some sort of query system be helpful? If so, how should the query system work?)*

D. Closing

12. *We have discussed a number of important issues, but I have one last question before we close. Is there anything else you would like to tell EIA about electricity transmission data or anything else?*

Thank you very much.